normal condition where the cavity axis 28 is substantially vertical to the horizon). Annular plate 62 also acts as an extension travel limiter when sleeve 52 is moved parallel to the axis 28 in a direction traveling towards petal plate 36, by impingement on flange 42.

Please replace paragraph 2, page 22 (page 22, lines 13-30 through page 23, lines 1-10), with the following amended paragraph:

Movement of sleeve 52 towards petal plate 36 (normally an upward substantially vertical movement, relative to the horizontal) engages finger portion 60 on the land 55 of ring 56 and pushes finger portion 60 towards petal plate 36, rotating link 44 on pivot pin 46 (clockwise as viewed in Fig. 1), to a maximum degree limited by stop plate 62 impinging on flange 42, and causing link 44 to advance in the direction of cavity axis 28, the notched portion 48 of link 44 acting on the rear 50 of petal plate 36 to push plate 36 radially inwardly towards cavity axis 28 an extent placing the innermost portion 38 of petal plate 36 inside cavity 26 of the body, effective, in combination with the other plates so extended, to allow the entire width of the tube 12 except its collar portion 14 to pass through cavity [20] 26. Movement of sleeve 52 away from petal plate 36 (normally a downward substantially vertical movement, relative to the horizontal) engages finger portion 60 on the land 53 of ring 54 and pushes finger portion 60 away from petal plate 36, rotating link 44 on pivot pin 46 (counterclockwise as viewed in Fig. 1) to a degree limited by stop plate 62 impinging on floor plate 30, causing link 44 to move away from the direction of cavity axis 28, drawing petal plate 36 radially outwardly from cavity axis 28, and in combination with the other petal plates also so drawn radially outwardly, enlarging the cavity to an extent allowing the entire width of tube 12 including the collar portion 14 to escape grasp of apparatus 10.

Please replace paragraph 3, page 23 (page 23, lines 23-30 through page 24, lines 1-12), with the following amended paragraph:

In operation of the apparatus shown in Fig. 1, tubing 12 is introduced into cavity of circular body 16 and the body is positioned below the collar portion 14 of he tubing 12. Sleeve 52 is slid upwardly, thereby moving finger portion 60 toward petal plates 36 and pivoting link 44 on pin 46, causing each of a plurality of spaced apart petal plates 36 horizontally supported on top 18 of body 16 to move radially inward to an extent positioning a radially innermost portion [40] 30 of plates 36 within cavity 26 of body 16 sufficiently to prevent passage of collar portion 14 through cavity 26. Then to release the tubing, sleeve 52 is slid downwardly, thereby moving finger portion 60 away from petal plates 36 and pivoting link 44 on pin 46, causing each of a plurality of spaced apart petal plates 36 horizontally supported on top 18 of body 16 to move radially outwardly to an extent removing the innermost portion 38 of plates 36 from cavity 26 of body 16, allowing passage of collar portion 14 through cavity 26.

Please replace paragraph 3, page 24 (page 24, lines 28-30 through page 25, lines 1-20), with the following amended paragraph:

Horizontally supported on top 118 of circular body 116 is a petal plate 136 that has a radially inner portion 138 and a radially outer portion 140. Fig 2 shows one of a plurality of petal plates so disposed. The other petal plates are spaced apart around top 118 of circular body 116, as partially shown in the cutaway of Fig. 3. Circular body 116 that supports petal plates 136 is a fulcrum when the weight of a well bore tube 12 is impressed on the innermost portion 138 of the petal plates 136. This occurs when the petals 136, in extended position, as hereinafter

described, support the weight of the well bore tube 12. To counter the force moment of such load on petal plates [130] 136, a circular counterforce member or ring 166 surrounds body 116, horizontally spaced radially outward from body 116, and is positioned above and adjacent the top of the outer portion 140 of petal plates 136 including when they are extended into the cavity. Counterforce ring 166 is secured atop pedal plates 136 by a buttress member 168 affixed relative to the body 116 at the [inner] outer side 122 and top 118 of body 116. As seen in Fig. 3 in combination with Fig. 2, each buttress 168 is interposed between adjacent spaced petal plates 136.

Please replace paragraph 2, page 25 (page 25, lines 21-30 through page 26, lines 1-22), with the following replacement paragraph:

A flange 142 is affixed to the outer side 122 of body 116 intermediate top 118 and bottom 120 thereof. Flange 142 pivotally mounts the cylinder 172 of a piston and cylinder assembly 170 on a pivot pin 146, pivotally fixing the cylinder relative to the body. Extending from the piston of the cylinder and piston assembly 170 is a rod 174, the end 176 distal to the piston being pivotally mounted on a pin 175 fastened to a link 144 that is affixed to petal plate 136. A slideway substantially normal to axis 128 of cavity 126 is provided for link 144 to slide radially inwardly and outwardly respectively to and from cavity 126 by opposing channel members, one of which, indicated by reference numeral 178, is viewable in Fig. 2. Slide link 144 is reciprocated by the action of rod 174, connected to the piston of cylinder and piston assembly 170 moved by force of fluid admitted into or withdrawn from the cylinder within which the piston reciprocates. On retraction of rod 174, pin 175 moves link 144 radially inward, causing a petal plate 136 among the plurality of such plates horizontally supported on top 118 of body

116 to move radially inward to an extent positioning a radially innermost portion 138 of plates [116] 136 within cavity 126 of body 116 sufficiently to prevent passage of collar portion 14 through cavity [120] 126. To release the tubing, rod 174 is extended from cylinder and piston assembly 170, thereby moving link slide 144 radially away from cavity [120] 126, causing petal plate 136 among the plurality of such plates to move radially [inwardly] outwardly to an extent removing the innermost portion 138 of plates [116] 136 from cavity [120] 126of body 116, allowing passage of collar portion 14 through cavity [120] 126.

Please replace paragraph 2, page 26 (page 26, lines 23 to 30 through page 27, lines 1-8), with the following replacement paragraph:

Referring now to Fig. 4, a third form of an apparatus for manipulating well bore tubing having a collar, in accordance with this invention, is indicated generally by the reference number 200. The same reference numerals as used in Fig. 1 identify well bore tube 12 and collar portion 14[.], and includes a circular body 216 having a top 218, bottom 220, outer side 222, inner side 224 and central cavity 226. Cavity 226 is centered on body axis 228 and has a diameter sufficient to admit through cavity 226 the entire width of a well bore tube 12, including collar portion 14, that is to be received for manipulation by apparatus 200. The bottom 220 of circular body 216 is affixed to an annular floor plate 230 that surmounts a gusseting plate 232 of a frusto-conical member 234 tapering inwardly toward cavity 226 to guide body 216 over a well bore tube 12 that is to be received within cavity 226.

Please replace paragraph 2, page 27, lines 9-30, with the following replacement paragraph:

Horizontally supported on top 218 of circular body 216 is a petal plate 236 that has a radially inner portion 238 and a radially outer portion 240. Fig. 4 shows one of a plurality of petal plates so disposed. The other plates (not shown) are spaced apart around top 218 of circular body 216. Circular body 216 that supports petal plates 236 is a fulcrum when the weight of a well bore tube 12 is impressed on the innermost portion 238 of the petal plates 236. This occurs when the petal plates 236, in extended position, as hereinafter described, support the weight of the well bore tube 12. To counter the force moment of such load on petal plates [230] 236, a circular counterforce member or ring 266 surrounds body 216, horizontally spaced radially outward from body 216, and is positioned above and adjacent the top of the outer portion 240 of petal plates 236 including when they are extended into the cavity. Counterforce ring 266 is secured atop pedal plates 236 by a buttress member 268 affixed relative to the body 216, as seen in Fig. 4 at the inner side 222 and top 218 of body 216. Each buttress 268 is interposed between adjacent spaced petal plates 236.

Please replace paragraph 1, page 28, lines 1-30, with the following replacement paragraph:

A flange 242 is affixed to floor plate 230. Flange 242 pivotally mounts the cylinder 272 of a piston and cylinder assembly 270 on a pivot pin 246, pivotally fixing the cylinder relative to the body. Extending from the piston of the cylinder and piston assembly 270 is a rod 274, the end 276 distal to the piston being pivotally mounted on a pin 275 fastened to a link 244 that is affixed to petal plate 236. A slideway substantially normal to axis 228 of cavity 226 is provided for link 244 to slide radially inwardly and outwardly respectively to and from cavity 226 by opposing channel members, one of which, indicated by reference numeral 278, is viewable in

Fig. 4. Slide link 244 is reciprocated by the action of rod 274, connected to the piston of cylinder and piston assembly 270 moved by force of fluid admitted into or withdrawn from the cylinder within which the piston reciprocates. On retraction of rod 274, pin 275 moves link 244 radially inward, causing a petal plate 236 among the plurality of such plates horizontally supported on top 218 of body 216 to move radially inward to an extent positioning a radially innermost portion 238 of plates [216] 236 within cavity 226 of body 216 sufficiently to prevent passage of collar portion 14 through cavity [220] 226. To release the tubing, rod 274 is extended from cylinder and piston assembly 270, thereby moving link slide 244 radially away from cavity [220] 226, causing petal plate 236 among the plurality of such plates to move radially inwardly to an extent removing the innermost portion 238 of plates [216] 236 from cavity [220] 226 of body 216, allowing passage of collar portion 14 through cavity [220] 226.

Please replace paragraph 2, page 29 (page 29, lines 19-30 through page 30, lines 1-11) with the following replacement paragraph:

Horizontally supported on top 318 of circular body 316 is a petal plate 336 that has a radially inner portion 338 and a radially outer portion 340. Fig. 5 shows one of a plurality of petal plates so disposed. The other plates (not shown) are spaced apart around top 318 of circular body 316; see and compare Fig. 3. Circular body 316 that supports petal plates 336 is a fulcrum when the weight of a well bore tube 12 is impressed on the innermost portion 338 of the petal plates 336. This occurs when the petal plates 336, in extended position, as hereinafter described, support the weight of the well bore tube 12. To counter the force moment of such load on petal plates [330] 336, a circular counterforce member or bolster ring 366 at least partially surrounds body 316, horizontally spaced radially outward from body 316, and is positioned above and

adjacent the top of the outer portion 340 of petal plates 336 including when they are extended into cavity 326. Counterforce bolster ring 366 is secured atop pedal plates 336 by a buttress member 368 affixed relative to the body 316, as seen in Fig. 5 at the inner side 322 of body 316. Each buttress 368 is interposed between adjacent spaced petal plates 336 (compare Fig. 3).

Please replace paragraph 2, page 30 (page 30, lines 12-30 through page 31, lines 1-18), with the following replacement paragraph:

A flange 342 is affixed to body 316 near the bottom 320 thereof. Flange 342 pivotally mounts the cylinder 372 of a piston and cylinder assembly 370 on a pivot pin 346, pivotally fixing the cylinder relative to the body. Extending from the piston of the cylinder and piston assembly 370 is a rod 374, the end 376 distal to the piston being pivotally mounted on a pin 375 fastened to an elongate cam 344 that slidingly engages petal plate 336. Cam 344 is located radially outward from body 316 and is linearly moveable parallel to cavity axis [326] 328. Cam 344 is received in an aperture 337 in petal plate 336 between inner portion 338 and outer portion 340 and in aperture 367 in counterforce bolster ring 366. Cam 344 is reciprocated by the action of rod 374, connected to the piston of cylinder and piston assembly 370 moved by force of fluid admitted into or withdrawn from the cylinder within which the piston reciprocates. On retraction of rod 374, pin 375 moves cam 344 downward, parallel to axis 328, causing the radially inward surface of aperture 337 of petal plate 336, among the plurality of such plates horizontally supported on top 318 of body 316, to slide up cam ramp 345, and, pushed by cam 344, move petal plate 336 radially inward, positioning radially innermost portion 338 of petal plate [316] 336 within cavity 326 of body 316 sufficiently, with the other petal plates, similarly actuated, to prevent passage of collar portion 14 through cavity [320] 326. To release tubing 12, rod 374 is

extended from cylinder and piston assembly 370, thereby moving cam [334] 344 to slide petal plate 336 down cam ramp 345 and, relieved from displacement by ram 345, move radially away from cavity [320] 326, and with the similar actuation of the plurality of the other such petal plates 336, to move radially outwardly to an extent removing the innermost portion 338 of petal plates [316] 336 from cavity [320] 326 of body 316, allowing passage of collar portion 14 through cavity [320] 326.

Please replace paragraph 2, page 31 (page 31, lines 19-30 through page 32, lines 1-7), with the following replacement paragraph:

Referring now to Fig. 6, a fifth form of an apparatus for manipulating well bore tubing having a collar, in accordance with this invention, is indicated generally by the reference number 400. The well bore tube 12 and collar portion 14 in are to be understood to be present in the positions depicted in Figs. 1-5, although not illustrated in Fig. 6. Apparatus 400 includes a circular body 416 having a top 418, bottom 420, outer side 422, inner side 424 and central cavity 426. Cavity 426 is centered on a body axis [428], as in the embodiments illustrated in Figs. 1-5, and has a diameter sufficient to admit through cavity 426 the entire width of a well bore tube 12, including collar portion 14, that is to be received for manipulation by apparatus 400. Although not illustrated in Fig. 6, suitably, as shown by Figs. 1 and 4, the bottom 420 of circular body 416 may affixed to an annular floor plate that surmounts a gusseting plate of a frusto-conical member tapering inwardly toward cavity 426 to guide body 416 over a well bore tube 12 that is to be received within cavity 426.

Please replace paragraph 2, page 32, lines 8-30, with the following replacement

paragraph:

Horizontally supported on top 418 of circular body 416 is a petal plate 436 that has a radially inner portion 438 and a radially outer portion 440. Fig. 6 shows one of a plurality of petal plates so disposed. The other plates (not shown) are spaced apart around top 418 of circular body 416; see and compare Fig. 3. Circular body 416 that supports petal plates 436 is a fulcrum when the weight of a well bore tube 12 is impressed on the innermost portion 438 of the petal plates 436. This occurs when the petal plates 436, in extended position, as hereinafter described, support the weight of the well bore tube 12. To counter the force moment of such load on petal plates [430] 436, a circular counterforce member or bolster ring 466 at least partially surrounds body 416, horizontally spaced radially outward from body 416, and is positioned above and adjacent the top of the outer portion 440 of petal plates 436 including when they are extended into cavity 426. Counterforce ring 466 is secured atop pedal plates 436 by a buttress member 468 affixed relative to the body 416, as seen in Fig. 6, at the inner side 422 of body 416. Each buttress 468 is interposed between adjacent spaced petal plates 436 (compare Fig. 3).

Please replace paragraph 1, page 33, lines 1-28, with the following replacement paragraph:

Elongate cam 444 is located radially outward from body 416 and is linearly moveable parallel to the cavity axis [426]. Cam 444 is received in an aperture 437 in petal plate 436 between inner portion 438 and outer portion 440 and in aperture 467 in counterforce bolster ring 466. Elongate cam 444 includes a portion 443 above the elevation of petal plate 436 when the petal plates 436 are retracted. Ring cam 474 is located adjacent elongate cam portion 443

between elongate cam portion 443 and cavity 426 over body 416. One of elongate cam portion 443 and ring cam 474 contains a helical groove facing the other of 443 and 474, and the other of 443 and 474 contains a pin facing the helical groove, whereby upon rotation of ring cam 474 in one rotational direction about cavity axis 428, the pin follows the groove and moves elongate cam 444 in one linear direction parallel to the cavity axis [428], and upon rotation of ring cam 474 in a rotational direction about the cavity axis [428] opposite to the one direction, the pin follows the groove and moves the elongate cam 444 parallel to the cavity axis [428] in a linear direction opposite to the one linear direction. In Fig. 6, the helical groove (not seen) is formed in elongate cam portion 443, and ring cam 474 moves a pin 475 in the helical groove, elevating elongate cam 444 when pin 475 is caused by rotation of ring cam 474 to move upward in the groove, and lowering elongate cam 444 when pin 475 is caused by rotation of ring cam 474 to move downward in the groove.

Please replace paragraph 2, page 33 (page 33, lines 29-30 through page 34, lines 1-19), with the following replacement paragraph:

Referring now to Fig. 7, a sixth form of an apparatus for manipulating well bore tubing having a collar, in accordance with this invention, is indicated generally by the reference number 500. The well bore tube 12 and collar portion 14 in are to be understood to be present in the positions depicted in Figs. 1-5, although not illustrated in Fig. 7. Apparatus 500 includes a circular body 516 having a top 518, bottom 520, outer side 522, inner side 524 and central cavity 526. Cavity 526 is centered on the body axis [528], as in the embodiments illustrated in Figs. 1-5, and has a diameter sufficient to admit through cavity 526 the entire width of a well bore tube 12, including collar portion 14, that is to be received for manipulation by apparatus 500.

Although not illustrated in Fig. 7, suitably, as shown by Figs. 1 and 4, the bottom 520 of circular body 516 may affixed to an annular floor plate that surmounts a gusseting plate of a frusto-conical member tapering inwardly toward cavity 526 to guide body 516 over a well bore tube 12 that is to be received within cavity 526.

Please replace paragraph 2, page 34 (page 34, lines 19-30 through page 35, lines 1-11), with the following replacement paragraph:

Horizontally supported on top 518 of circular body 516 is a petal plate 536 that has a radially inner portion 538 and a radially outer portion 540. Fig. 6 shows one of a plurality of petal plates so disposed. The other plates (not shown) are spaced apart around top 518 of circular body 516; see and compare Fig. 3. Circular body 516 that supports petal plates 536 is a fulcrum when the weight of a well bore tube 12 is impressed on the innermost portion 538 of the petal plates 536. This occurs when the petal plates 536, in extended position, as hereinafter described, support the weight of the well bore tube 12. To counter the force moment of such load on the petal plates [530] 536, a circular counterforce member or bolster ring 566 at least partially surrounds body 516, horizontally spaced radially outward from body 516, and is positioned above and adjacent the top of the outer portion 540 of petal plates 536, including when they are extended into cavity 526. Counterforce bolster ring 566 is secured atop pedal plates 536 by a buttress member 568 affixed relative to the body 516, as seen in Fig. 7 at the inner side 522 of body 516. Each buttress 568 is interposed between adjacent spaced petal plates 536 (compare Fig. 3).

Please replace paragraph 2, page 35, lines 12-23, with the following replacement

paragraph:

Elongate cam 544 is located radially outward from body 516 and is linearly moveable parallel to cavity axis 526. Cam 544 is received in an aperture 537 in petal plate 536 between inner portion 538 and outer portion 540 and aperture 567 of bolster ring 566. Elongate cam 544 includes a portion 543 above the elevation of petal plate 536 when the petal plates 536 are retracted. Portion 543 includes a recess 547 facing cavity 526. An annular reciprocation piece 574 is received in recess 543. Upon reciprocation of said annular reciprocation piece 574, cam portion [533] 543 is moved linearly parallel to cavity axis 526.

Please replace paragraph 3, page 35 (page 35, lines 23-30 through page 36, lines 1-8), with the following replacement paragraph:

Referring to Fig. 8, a seventh form of the invention is indicated by the reference numeral 600. The same reference numerals as used in Fig. 1 identify well bore tube 12 and collar portion 14. Apparatus 600 includes a circular body 616 having a top 618, bottom 620, outer side 622, inner side 624 and central cavity 626. Cavity 626 is centered on a body axis [628] (not shown, but understood; compare Fig. 1) and has a diameter sufficient to admit through cavity 626 the entire width of a well bore tube 12, including collar portion 14, that is to be received for manipulation by apparatus 600. The bottom 620 of circular body 616 is affixed to an annular gusseting plate 632 of a frusto-conical or funnel guide plate 634 that tapers inwardly toward cavity 626 to guide body 616 over a well bore tube 12 that is to be received within cavity 626.

Please replace paragraph 2, page 36 (page 36, lines 9-30 through page 37, lines 1-2), with

the replacement paragraph:

Horizontally supported on top 618 of circular body 616 is a petal plate 636 that has a radially inner portion 638 and a radially outer portion 640. Fig. 8 shows one of a plurality of petal plates so disposed. The other plates (not shown) are spaced apart around top 618 of circular body 616; see and compare Fig. 3. Circular body 616 that supports petal plates 636 is a fulcrum when the weight of a well bore tube 12 is impressed on the innermost portion 638 of the petal plates 636. This occurs when the petal plates 636, in extended position, as hereinafter described, support the weight of the well bore tube 12. To counter the force moment of such load on petal plates [630] 636, a circular counterforce member or bolster ring 666 at least partially surrounds body 616, spaced radially outward from body 616, and is positioned above and adjacent the top of the outer portion 640 of petal plates 636 including when they are extended into cavity 626. Counterforce bolster ring 666 is secured atop pedal plates 636 by a lower portion thereof 668 affixed relative to the body 616, as seen in Fig. 8, at the [inner] outer side 622 of body 616. An inner ring 668 vertically restrains petal plates 636 and guides then for radial movement.

Please replace paragraph 2, page 37 (page 37, lines 3-30 through page 38, lines 1-5), with the following replacement paragraphs:

Received within an aperture 637 in petal plate 636 between inner portion 638 and outer portion 640 is an eccentric cam lobe 645 on cam shaft 644 substantially parallel to the body axis [628] and supported in bearing 680. Cam shaft 644 terminates in a sprocket 682 held from bearing 680 by spacer 684. Sprocket 682 may be turned manually or by hydraulic, electric or pneumatic motors. The cam shafts for all the petal plates 636 are interconnected by a chain so

that motivational force is applied to all of them together to move cam lobes 645 in unison. Cam lobe 645 rotates on the axis of shaft 644 and engages the radially inward surface of aperture 637 of petal plate 636, all cam lobes 645 doing the same for all the petal plates horizontally supported on top 618 of body 616. Followingly pushed by cam lobe 645, petal plate 636 is moved radially inward, positioning radially innermost portion 638 of petal plate 616 within cavity 626 of body 616 sufficiently, with the other petal plates, similarly actuated, to prevent passage of collar portion 14 through cavity [620] 626. To release tubing 12 from apparatus 600, cam shafts 644 are rotated to move the eccentric of cam lobe 645 away from the radially inner surface of aperture 637 towards the radially outer surface of aperture 637, to impress eccentric lobe 645 onto the radially outer surface of petal plate aperture 637 and push petal plate 636 radially outward. The similar and coincident actuation of the other such petal plates 636, moves all petal plates 636 radially outwardly to an extent removing the innermost portion 638 of petal plates 636 from cavity 626 of body 616, allowing passage of collar portion 14 through cavity [620] 626. In the foregoing fashion petal plates 636 at their apertures 637 function as a cam follower.

Please replace paragraph 2, page 38, lines 6-25, with the following replacement paragraph:

From the foregoing, it will be understood that in operation the embodiments of Figs. 1-8 perform a method of the invention for manipulating well bore tubing, that comprises: introducing tubing 12 into the cavity 26, 126, 226, 326, 426, 526 or 626, respectively, of a circular body 16, 116, 216, 316, 416, 516 or 616 having a central cavity of diameter to admit therethrough a collar portion 14 of tubing 12; positioning body 16, 116, 216, 316, 416, 516 or 616 below collar portion 14 of tubing 12; and moving a plurality of petal plates, respectively, 36, 136, 236, 336, 436, 536

or 636 horizontally supported on and spaced apart around the top, respectively 18, 118, 218, 318, 418, 518 or 618 of body 16, 116, 216, 316, 416, 516 or 616 radially inward, substantially normal to the body axis [28, 128, 228, 328, 428, 528 or 628], respectively, over body, 16, 116, 216, 316, 416, 516 or 616, into the cavity 26, 126, 226, 326, 426, 526 or 626, respectively, an extent sufficient to prevent passage of the collar portion 14 of tubing 12 through cavity 26, 126, 226, 326, 426, 526 or 626, respectively.

Please replace paragraph 3, page 38 (page 38, lines 26-30 through page 39, lines 1-20), with the following replacement paragraph:

In respect to the invention in the forms described in respect to Figs. 5, 6 and 7, petal plates 336, 436 and 536, respectively include apertures 337, 437 and 537 receiving elongate cams, respectively 344, 444, and 555, movable linearly parallel to the respective axes [328, 428 and 528], respectively, of cavitys 326, 426, and 526, for sliding on plates 336, 436 and 536, and the step of moving petal plates 336, 436 or 536 comprises actuating elongate cam 344, 444, or 555, respectively, to ride plates 336, 436 or 536, respectively, on cam 344, 444, or 555. In the form of the invention described in respect to Fig. 5, the elongate cam 344 is actuated by a rod 374 of a piston moved by force of fluid admitted into or withdrawn from a cylinder within which the piston reciprocates, the cylinder being fixed relative to the body 316 and the piston rod end 376 distal from the piston attaching cam 344. In the embodiment depicted in Fig. 6, elongate cam 444 is actuated by rotating a ring cam 474 surrounding cavity 426 and operatively connected to said elongate cam 444 to translation the rotary motion of ring cam 474 to linear motion of elongate cam 444. In the form of the invention described in reference to Fig. 7, elongate cam 544 is actuated by reciprocating a ring 574 received in a recess 547 of an extended portion 543 of

elongate cam 544.

Please replace paragraph 2, page 39, lines 21-29, with the following replacement paragraph:

In respect to the invention in the form described relative to Fig. 8, wherein petal plates 636 include an aperture 637 receiving a cam comprising an eccentric lobe 645 and a camshaft 644, located radially outwardly from body 616 and rotatable about shaft 644 axis substantially parallel to the axis [628] of cavity 626, petal plates 636 are operated by rotating the cam eccentric 645 to push the proximal portion 638 of petal plates 636 in or out of body cavity 626.

Please replace paragraph 2, page 42, lines 8-23, with the following replacement paragraph:

Arm members 736a, 736b, 736c and 736d each have an proximal portion, respectively, 738a, 738b, 738c and 738d, a distal portion, respectively, 740a, 740b, 740c and 740d, a front portion, respectively, 742a, 742b, 742c and 742d, and a rear portion, respectively 744a, 744b, 744c and 744d, and are each pivotal at their proximal portion around an arm member axis, respectively, 746a, 746b, 746c and 746d, parallel to the body axis [718]. Arm members 736a, 736b, 736c and 736d pivot from a first position, where proximal portions 738a, 738b, 738c and 738d of arm members 736a, 736b, 736c and 736d are not within a projection of body cavity 716, for example, as shown in Fig. 9, to a second position where the proximal portions 738a, 738b, 738c and 738d of arm members 736a, 736b, 736c and 736d are inside a projection of the cavity, for example, as shown in Fig. 10.

Please replace paragraph 3, page 42 (page 42, lines 24-30 through page 43, lines 1-12), with the following replacement paragraph:

In the form of the invention shown in [Fig.] Fig.'s 9 and 10, one arm member 736a of an arm member pair 736a, 736b pivots clockwise and the other arm member 736b of pair 736a, 736b pivots counterclockwise, to swing arm members 736a, 736b from a first or un-deployed position, as exemplified in Fig. 9, where the front portions 742a and 742b of arm members pair 736a, 736b (and the front portions 742c and 742d of arm member pair 736c, 736d) are removed from one another and the proximal portions 738a and 738b of arm member pair 736a, 736b (and the proximal portions 738c, 738d of arm member pair 736c, 736d) are not within a projection of body cavity 718, to a second or deployed position, as exemplified in Fig. 10, where the front portions 742a and 742b of arm member pair 736a, 736b (and the front portions 742c and 742d of arm member pair 736c, 736d) are adjacent one another and the proximal portions 738a and 738b of arm member pair 736a, 736b (and the proximal portions 738c, 738d of arm member pair 736c, 736d) are inside a projection of cavity 718.

Please replace paragraph 2, page 50, lines 5-11, with the following replacement paragraphs:

Affixed to the periphery of annular top plate 1020 is an annular sleeve 1025, the bottom of which is chamfered as at 1027 for welding purposes. Within sleeve 1025 a plurality of swivel mounts [1029] (1029a, 1029b, 1029c, 1029e and 1029f) are affixed to annular top plate 1020 spaced circumferentially around the inner diameter of top plate 1020.

Please replace paragraph 1, page 51, lines 1-18, with the following replacement paragraph:

Distal portion 1040 affixed to a swivel mount 1029 by a pin 1035 is pivotally connected to top plate 1020 of body 1016. As depicted in Figs 14, 15 and 16 a flap plate 1036 lays on top plate 1020, with proximal portion 1038 extending into cavity 1026. As best seen in Fig. 16, the proximal portion of flap plate 1036a extends into cavity 1026, normal to body axis 1028, sufficiently, in combination with other flap plates 1036b, 1036c, 1036d, 1036f and 1036e so extended, to form a broken circle, comprised of the combination of arcs [1044a, 1044b, 1044c, 1044d, 1044e and 1044f]. The radius of the flap plate arcs 1044a-1044f and the lengths of such arcs, form a circle having a diameter larger than the external diameter of the tubular body 1012 of the casing but smaller than the external diameter of the collar portion of the casing. Thus with the flap plates extended into cavity 1026, the casing is unable to pass through cavity 1026 of elevator apparatus 1000.

Please replace paragraph 2, page 51 (page 51, lines 19-30 through page 52, lines 1-29), with the following replacement paragraph:

Actuators are provided to lift proximal portions 1038 of flap plates 1036 out of cavity 1026, thereby to allow the collar portion of casing 1011 to pass through cavity 1026 of elevator apparatus 1000. The actuators comprise an annular cap plate 1046, linkages from cap plate 1046 to flap plates 1036a-1036f, and a cylinder and piston assembly for elevating cap plate 1036 causing the linkages to raise flap plates 1036a-1036f. More particularly, annular cap plate 1046 has a peripheral skirt 1047 that terminates in a rim 1048, which rests on annular top plate 1020

when flap plates 1036a-1036f rest on top plate 1020 normal to body axis 1028 with proximal portions 1038a-1038f extending into cavity 1026. Skirt 1047 is chamfered as at 1048 for welding it to cap plate 1046. A plurality of flange swivel mount pairs 1049a-1049f equal in number to the number of flap plates 1036a-1036f is affixed circumferentially spaced around skirt 1047 projecting radially inward and normal to body axis 1028 (in Fig. 16 only the flange swivel plates 1049a and 1049d are shown, for clear views of the structure relative to flap plates 1036b, 1036c, 1036 e and 1036f). A pin opening is transversely provided through each swivel mounting pair 1049a-1049f for receipt of a pin [1051] for each opening. A plurality of links 1052a-1052f equal in number to the number of flap plates 1036a-1036f receive pins 1051a-1051f to pivot links 1052a-1052f from swivel plates 1049a-1049f. At the opposite end of links 1052a-1052f, each of the links is provided with another transverse opening for receipt of a pin [1053]. This end of links 1052a-1052f is received between the trunnions of opposed flap plate swivel mounts 1039a-1039f, and pivotally fastened to swivel mounts 1039a-1039f by pins 1053a-1053f respectively, with pins 1053a-1053f being secured by cotter keys [1054a-1054f]. Thus when cap plate 1046 is elevated, links 1052a-1052f pivotally lift flap plates 1036a-1036f off annular top plate 1020, rotating flap plates 1036a-1036f about the axis of pins [1035a-1035f] in top plate swivel mounts 1029a-1029f, respectively, to remove the proximal portions 1038a-1038f of the flap plates out of cavity 1026, as depicted in Fig. 13.

Please replace paragraph 2, page 52 (page 52, lines 29-30 through page 53, lines 1-26), with the following replacement paragraph:

Referring to Fig. 15, a pair of cylinder and piston

assemblies 1055, 1056 are disposed in body 1016 between annular base plate 1019 and annular

top plate 1020 spaced 180 degrees apart. The base of each cylinder and piston assembly 1055 and 1056 rests on a block 1057 (see also Fig. 22, which shows a like block 1157 in side view in another embodiment of the invention). Block 1057 sits in well 1058 (Fig. 16, see also Fig. 22, which is similar) formed on the upper surface of base plate 1019. The tops of cylinder and piston assemblies 1055 and 1056 are secured by bolts 1059 to the bottom of top plate 1020. Apertures 1060 are provided 180 degrees apart in top plate 1020 centered within bolts 1059 fastening cylinder and piston assemblies 1055 and 1056 to top plate 1020. Received within apertures 1060 are rods 1061, 1062 connected to the pistons of cylinder and piston assemblies 1055, 1056. The rods engagingly reach the underside of annular cap plate 1046 when cap plate skirt 1025 rests on the top of top plate 1020. The rod is moved by force of fluid admitted into or withdrawn from a cylinder within which the piston reciprocates. Fluid, either air for an air cylinder or liquid for a hydraulic cylinder, is circulated above and below the piston in the cylinder admitted through fluid lines 1063, 1064. Openings 1065, 1067 are provided in base plate 1019 and bottom plate 1030 for passage of fluid lines [1063a, 1064a (through 1065) and 1063b, 1064b (through 1067)].

Please replace paragraph 2, page 54 (page 54, lines 16-30 through page 55, lines 1-16), with the following replacement paragraph:

A pair of lift arms 1068, 1069 are secured substantially normal to body 1016, spaced 180 degrees apart and 90 degrees from cylinder and piston assemblies 1055, 1056. Referring to Figures 26-31, the manner by which lift arms 1068 and 1069 are secured is described in connection with a variation of the drill pipe elevator apparatus of Figs. 20-25. The same method of securing lift arms 1068, 1069 is suitably employed for the embodiment of Figs. 13-19 as for the embodiment of Figs. 26-31. Fig. 29 is a top view of a half 1217a of inner panel 1217

(corresponding to half of inner panel 1017 of Figs. 13-16). Fig. 28 is a side view of the half 1217a of panel 1217. The chamfer 1223 of half panel 1217a corresponds to the chamfer 1023 at the top of panel 1017. Chamfer 1224 of half panel 1217a corresponds to chamfer1024 at the bottom of panel 1017. The lateral ends 1270a and 1271a of half panel 1217a are chamfered for welding. Between ends 1270a and 1271a, half panel 1217a is arced at recess 1273a in a radius that accepts the outer diameter of a half of lift arms 1268 and 1269 at respective innermost portions 1274, 1275 of the lift arms (Fig. 26). Similarly a mirror image [1217b] (not depicted) of half panel 1217a fits around the other half of the innermost portions 1274, 1275 of respective lift arms 1270, 1271. The [recesses] recess 1273a [and 1273b] of the [two] half [panels] panel 1217a [and 1217b] [are] is welded to lift arms 1268, 1269 at innermost portions 1274, 1275, respectively, and the ends [1270a and 1271a] of half panel 1217a are welded to the corresponding ends 1270b and 1271b of the half panel [1271b]. So welded up, the half panels [1217a and 1217b] form inner panel 1217.

Please replace paragraph 2, page 55 (page 55, lines 17-30 through page 56, lines 1-9), with the following replacement paragraph:

Fig. 31 is a top view of a half 1218a of outer panel 1218 (corresponding to half of outer panel 1018 of Figs. 13-16). Fig. 30 is a side view of the half 1218a of panel 1218. The chamfer 1222 of half panel 1218a corresponds to the chamfer 1022 at the top of panel 1018. Chamfer 1221 of half panel 1218a corresponds to chamfer 1021 at the bottom of panel 1018. The lateral ends 1276a and 1277a of half panel 1218a are chamfered for welding. Between ends 1276a and 1277a, half panel 1218a is arced at recess 1277a in a radius that accepts the outer diameter of a half of lift arms 1268 and 1269 at respective intermediate portions 1278, 1279 of the lift arms

(Fig. 26). Similarly a mirror image [1218b] (not depicted) of half panel 1218a fits around the other half of the intermediate portions 1278, 1279 of respective lift arms 1270, 1271. The recesses 1277a and 1277b of the two half panels 1218a and 1218b are welded to lift arms 1268, 1269 at intermediate portions 1278, 1279, respectively, and the ends 1276a and 1277a of half panel 1218a are welded to the corresponding ends [1276b and 1277b] of the half panel [1218b]. So welded up, the half panels [1218a and 1218b] form outer panel 1218.

Please replace paragraph 2, page 63, lines 21-29, with the following replacement paragraph:

Affixed to bottom plate 1230 is an annular frustoconical guidance plate 1234 braced by a plurality of gussets 1232 circumferentially spaced about guidance plate 1234 [between it and bottom plate 1225]. The base 1231 of guidance plate 1234 is wider than its top 1233, to facilitate centering of casing 1211 when elevator apparatus 1200 is lowered onto the collar portion of the casing and thence downwardly about the tubular body 1212 of casing 1211.

AMENDMENTS TO THE DRAWINGS